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10/812,517	03/30/2004	Thomas J. Foster	H10532/JDP	3309

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PATENT LEGAL STAFF
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EXAMINER

SCHLACK, SCOTT A

ART UNIT	PAPER NUMBER
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2625

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/812,517

Applicant(s)

FOSTER ET AL.

Examiner

Scott A. Schlack

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment was received on 12/22/2006, and has been entered and made of record. Currently, claims 1-41 are pending. The examiner notes that the previous Non-Final office action dated 09/20/2006 is being replaced by the current rejection in response to the applicant's arguments, which the examiner views to be persuasive. As such the response time has been reset to coincide with this Non-Final office action.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-41 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-41 of copending Application No. 10/812,605. Although the conflicting claims are not identical, they are not patentably distinct from each other. Below is a listing of the claim equivalencies (from the current application 10/812,517 to copending application 10/812,686) with minor obvious variations disclosed.

Claim 1: Claim 1 of copending app	Claim 22: Claim 26 of copending app
Claim 2: Claim 3 of copending app	Claim 23: Claim 27 of copending app
Claim 3: Claim 4 of copending app	Claim 24: Claim 29 of copending app
Claim 4: Claim 5 of copending app	Claim 25: Claim 30 of copending app
Claim 5: Claim 6 of copending app	Claim 26: Claim 31 of copending app
Claim 6: Claim 7 of copending app	Claim 27: Claim 32 of copending app
Claim 7: Claim 8 of copending app	Claim 28: Claim 33 of copending app
Claim 8: Claim 9 of copending app	Claim 29: Claim 34 of copending app

Claim 9: Claim 11 of copending app	Claim 30: Claim 2 of copending app
Claim 10: Claim 12 of copending app	Claim 31: Claim 10 of copending app
Claim 11: Claim 13 of copending app	Claim 32: Claim 17 of copending app
Claim 12: Claim 14 of copending app	Claim 33: Claim 20 of copending app
Claim 13: Claim 15 of copending app	Claim 34: Claim 28 of copending app
Claim 14: Claim 16 of copending app	Claim 35: Claim 35 of copending app
Claim 15: Claim 18 of copending app	Claim 36: Claim 36 of copending app
Claim 16: Claim 19 of copending app	Claim 37: Claim 37 of copending app
Claim 17: Claim 21 of copending app	Claim 38: Claim 38 of copending app
Claim 18: Claim 22 of copending app	Claim 39: Claim 39 of copending app
Claim 19: Claim 23 of copending app	Claim 40: Claim 40 of copending app
Claim 20: Claim 24 of copending app	Claim 41: Claim 41 of copending app
Claim 21: Claim 25 of copending app	

The examiner notes that the claims of the copending application 10/812,605, would be exact replicas to that of the current application, with exception to the fact that they do not specifically disclose wherein in the method of printing an image, the printer has magnetic ink character recognition (MICR) toning capability. MICR toning capability was well known at the time of the invention to those skilled in the art, and therefore the examiner views this feature and any other minor inconsistencies to be obvious variations of the same invention, which in no way change the scope of the invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 3, 8, 10, 14, 25 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3, 10, 25 and 37 recite the limitation "the binary digital values". There is insufficient antecedent basis for this limitation in the claim as there is no prior mention of "binary digital values" in these claims or their parent claims from which they depend. As such it is unclear to the examiner, from the claim language, exactly what subject matter the applicant regards as the invention.

Claims 14 recites the limitation "the printer print nonuniformities". There is insufficient antecedent basis for this limitation in the claim as there is no prior mention of "printer print nonuniformities" in these claims or their parent claims from which they depend. As such it is unclear to the examiner, from the claim language, exactly what subject matter the applicant regards as the invention.

Claims 1, 8 and 14 recite the limitation "converting the image". There is insufficient antecedent basis for this limitation in these claims as there is no prior mention of an "image" to be converted into a digital bitmap in these claims. The examiner notes the respective method claims disclose only printing an image in the

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preamble. The examiner notes that printing can only occur after an image has already been converted to a digital bitmap. Therefore it is unclear to the examiner, from the claim language, exactly what subject matter the applicant regards as the invention.

Due to the above cited indefinite claim language, the examiner applies their broadest reasonable interpretation of the claim language when rejecting these claims in the Claims Rejection section below. Revisions are required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 8, 14, 16-18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bares (US 5,057,936) in view of Hirota et al. (US 2003/0142865).

With respect to claim 1, Bares discloses a method of printing an image with a printer having magnetic ink character recognition (MICR) toning capability (col 3, lines 39-43), the method comprising the steps of: converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information (col 3, lines 12-17); The examiner notes that a digital bitmap is inherently comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information.

Bares does not disclose defining each pixel as either a background pixel, interior pixel, or an edge pixel; and, reassigning the digital value of one or more edge pixels or

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interior pixels independently, thereby altering the concentration of magnetizable substances within the image when printed in order to improve the readability of printed characters by reading instrumentation.

Hirota does disclose defining each pixel as either a background pixel, interior pixel, or an edge pixel (page 1 paragraph 0009, page 7, paragraphs 0101-0104); and, reassigning the digital value of one or more edge pixels or interior pixels independently, thereby altering the concentration of toner substances within the image when printed (page 12, paragraph 0160-0161) in order to improve the readability of printed characters (page 1, paragraph 0010).

The examiner notes that the first allocator defines the boundary between the background and the character image edge (thereby defining edge and background pixels, page 1, paragraph 0009 and page 7, paragraphs 0102-0103). Further the second allocator defines the area interposed between two boundary portions (thereby defining interior pixels, page 1, paragraph 0009 and page 7, paragraphs 0102-0103). The examiner also notes that in the disclosed character edge emphasis procedure (page 12, paragraph 0161) a gradation of the peripheral edge pixels is selected thereby altering the concentration of toner when printed.

At the time of the invention it would have been obvious to one skilled in the art to combine Bares magnetic ink character recognition (MICR) toner capable printer, with Hirota's toner printer capable of character edge enhancement, such that the character edge enhancement of Hirota could be applied to a MICR toner capable printer. The

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suggestion or motivation for doing so would have been to apply the edge correction techniques to a different printer type.

With respect to claim 8 the examiner notes identical features to claim 1, except claim 8 recites defining each pixel alternatively as a *one line pixel, or two line pixel*. Further, the reassigning of a digital value also alternatively includes a *one line pixel, or two line pixel*. The examiner notes that the alternative "or" only requires one alternative to be met for both the defining and reassigning steps. In the rejection pertaining to claim 1 above, three alternatives are cited for both steps. Therefore, the explanation given above for claim 1 is also valid for claim 8. The examiner holds that this is a reasonable interpretation of the claim language.

With respect to claim 14 the examiner notes identical features to claim 1, except claim 14 is discloses the feature of identifying the printer print nonuniformities (Hirota: The examiner interprets the identified character edges selected to undergo edge emphasis to be equivalent to identified printer print nonuniformities, col 12, paragraph 0161). Therefore, the explanation given above for claim 1 is also valid for claim 14. The examiner holds that this is a reasonable interpretation of the claim language.

With respect to claim 16 the examiner notes identical features to claim 1, except claim 14 is an apparatus claim reciting a printer having magnetic ink character recognition (MICR) toning capability (Bares: Figs 1 and 2). Therefore, the explanation given above for claim 1 is also valid for claim 16.

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With respect to claim 23 the examiner notes identical features to claim 16, except claim 23 claims a Raster Image Processor (Bares: RIS 68 of Fig 1). Therefore, the explanation given above for claim 16 is also valid for claim 23.

With respect to claims 17 and 18 the examiner takes Official Notice that at the time of the invention digital printers could accept input image data that was binary (black and white) or multi-bit (contone or color).

7. Claims 2-7, 9-13, 15, 19-22 and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bares (US 5,057,936) in view of Hirota et al. (US 2003/0142865) in further view of Smith et al. (US 5,657,430).

With respect to claim 2, Bares in view of Hirota discloses a method in accordance with claim 1 with a converting step. Bares in view of Hirota do not disclose wherein the converting step comprises converting the image to a binary digital bitmap and the reassigning step comprises reassigning the binary digital values to multi-bit digital values. Smith does disclose a converting step comprising converting an image to a binary digital bitmap (converting scalable font to a binary bitmapped character, col 3, line 61 through col 4, line 10) and reassigning the binary digital values to multi-bit digital values (binarized bitmap character is converted to a contone/multi-bit image, col 4, 11-16). At the time of the invention it would have been obvious to one skilled in the art to combine Bares in view of Hirota with Smith such that the character edge enhancement was capable of being performed on contone data that had been converted from binary bitmap data. The suggestion or motivation for doing so would have been to allow edge enhancement on binary digital bitmap data.

With respect to claim 9 the examiner notes identical features to claim 2.

Therefore, the explanation given above for claim 2 is also valid for claim 9.

With respect to claim 24 the examiner notes identical features to claim 2 except claim 24 is an apparatus claim. Therefore, the explanation given above for claim 2 is also valid for claim 24.

With respect to claim 3, Bares in view of Hirota in further view of Smith disclose a method in accordance with claim 1, wherein the converting step comprises converting the image to a multi-bit digital bitmap (Smith: image data converted to scalable font contours for a color image, col 4, lines 21-26) and the reassigning step comprises reassigning the binary digital values (Smith: scalable font converted to binary digital bitmap, col 4, lines 27-33) to multi-bit digital values (Smith: binary bitmap converted to contone/mult-bit image data, col 4, lines 61-65).

With respect to claim 10 the examiner notes identical features to claim 3.

Therefore, the explanation given above for claim 3 is also valid for claim 10.

With respect to claim 25 the examiner notes identical features to claim 3 except claim 25 is an apparatus claim. Therefore, the explanation given above for claim 3 is also valid for claim 25.

With respect to claim 4, Bares in view of Hirota in further view of Smith disclose a method in accordance with claim 1, wherein the reassigning step comprises increasing the value of edge pixels with respect to interior pixels (Hirota: The gradation level at the edge pixels are increased to improve contrast (unsharp masking), page 12, paragraph 0161).

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With respect to claim 11 the examiner notes identical features to claim 4.

Therefore, the explanation given above for claim 4 is also valid for claim 11.

With respect to claim 19 the examiner notes identical features to claim 4, except claim 19 is an apparatus claim. Therefore, the explanation given above for claim 4 is also valid for claim 19.

With respect to claim 26 the examiner notes identical features to claim 4 except claim 26 is an apparatus claim. Therefore, the explanation given above for claim 4 is also valid for claim 26.

With respect to claim 5, Bares in view of Hirota in further view of Smith disclose a method in accordance with claim 1, wherein the reassigning step comprises decreasing the value of edge pixels with respect to interior pixels (Smith: Edge smoothing technique decreases the charge at pixel edge of contone image thereby decreasing the value of the edge pixel, col 5, lines 26-39).

With respect to claim 12 the examiner notes identical features to claim 5. Therefore, the explanation given above for claim 5 is also valid for claim 12.

With respect to claim 20 the examiner notes identical features to claim 5, except claim 20 is an apparatus claim. Therefore, the explanation given above for claim 5 is also valid for claim 20.

With respect to claim 27 the examiner notes identical features to claim 5 except claim 27 is an apparatus claim. Therefore, the explanation given above for claim 5 is also valid for claim 27.

With respect to claim 6, Bares in view of Hirota in further view of Smith disclose a method in accordance with claim 1, further comprising performing the defining and reassigning steps two or more times (Hirota: The reassignment of gradation level for an edge pixel in the character edge enhancement occurs for multiple edge pixels. Therefore the examiner views the reassigning step to be performed multiple times, page 12, paragraph 0161).

With respect to claim 13 the examiner notes identical features to claim 6. Therefore, the explanation given above for claim 6 is also valid for claim 13.

With respect to claim 21 the examiner notes identical features to claim 6, except claim 21 is an apparatus claim. Therefore, the explanation given above for claim 6 is also valid for claim 21.

With respect to claim 28 the examiner notes identical features to claim 6 except claim 28 is an apparatus claim. Therefore, the explanation given above for claim 6 is also valid for claim 28.

With respect to claim 7, Bares in view of Hirota in further view of Smith disclose a method in accordance with claim 1, wherein the reassigning step comprises reassigning multiple interior pixel values (Smith: Edge smoothing technique decreases the charge at pixel edge region several pixels wide to include pixels interior to the edge pixels thereby reassigning multiple interior pixel values in the smoothing process, col 5, lines 26-39 and Fig 4).

With respect to claim 15 the examiner notes identical features to claim 7. Therefore, the explanation given above for claim 7 is also valid for claim 15.

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With respect to claim 22 the examiner notes identical features to claim 7, except claim 22 is an apparatus claim. Therefore, the explanation given above for claim 7 is also valid for claim 22.

With respect to claim 29 the examiner notes identical features to claim 7 except claim 29 is an apparatus claim. Therefore, the explanation given above for claim 7 is also valid for claim 29.

8. Claims 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bares (US 5,057,936) in view of Hirota et al. (US 2003/0142865) in further view of Fujisaki et al. (US 5,361,330).

With respect to claim 30, Bares in view of Hirota disclose a method in accordance with claim 1. Bares in view of Hirota do not disclose, this method further comprising classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction. Fujisaki does disclose classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction (col 1, line 51 through col 2, line 2). At the time of the invention it would have been obvious to one skilled in the art to combine Bares in view of Hirota with Fujisaki, such that the edge pixel classification and reassignment was further based on direction. The suggestion or motivation for doing so would have been to utilize direction data in the edge correction technique.

With respect to claims 31-34 the examiner notes identical features to claim 30. Therefore, the explanation given above for claim 30 is also valid for claims 31-34.

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With respect to claim 35, the examiner notes identical features to combined claims 1 and 30. Therefore, the explanation given above for combined claims 1 and 30 is also valid for claim 35.

9. Claims 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bares (US 5,057,936) in view of Hirota et al. (US 2003/0142865) in view of Fujisaki et al. (US 5,361,330) in further view of Smith et al. (US 5,657,430).

With respect to claim 36, Bares in view of Hirota in view of Fujisaki disclose a method in accordance with claim 35. Bares in view of Hirota in view of Fujisaki do not disclose wherein the converting step comprises converting the image to a binary digital bitmap and the reassigning step comprises reassigning the binary digital values to multi-bit digital values. Smith does disclose a converting step comprising converting an image to a binary digital bitmap (converting scalable font to a binary bitmapped character, col 3, line 61 through col 4, line 10) and reassigning the binary digital values to multi-bit digital values (binarized bitmap character is converted to a contone/multi-bit image, col 4, 11-16). At the time of the invention it would have been obvious to one skilled in the art to combine Bares in view of Hirota in view of Fujisaki with Smith such that the character edge enhancement was capable of being performed on contone data that had been converted from binary bitmap data. The suggestion or motivation for doing so would have been to allow edge enhancement on binary digital bitmap data.

With respect to claim 37, Bares in view of Hirota in view of Fujisaki in further view of Smith disclose a method in accordance with claim 35, wherein the converting step comprises converting the image to a multi-bit digital bitmap (Smith: image data

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converted to scalable font contours for a color image, col 4, lines 21-26) and the reassigning step comprises reassigning the binary digital values (Smith: scalable font converted to binary digital bitmap, col 4, lines 27-33) to multi-bit digital values (Smith: binary bitmap converted to contone/mult-bit image data, col 4, lines 61-65).

With respect to claim 38, Bares in view of Hirota in view of Fujisaki in further view of Smith disclose a method in accordance with claim 35, wherein the reassigning step comprises increasing the value of edge pixels with respect to interior pixels (Hirota: The gradation level at the edge pixels are increased to improve contrast (unsharp masking), page 12, paragraph 0161).

With respect to claim 39, Bares in view of Hirota in view of Fujisaki in further view of Smith disclose a method in accordance with claim 35, wherein the reassigning step comprises decreasing the value of edge pixels with respect to interior pixels (Smith: Edge smoothing technique decreases the charge at pixel edge of contone image thereby decreasing the value of the edge pixel, col 5, lines 26-39).

With respect to claim 40, Bares in view of Hirota in view of Fujisaki in further view of Smith disclose a method in accordance with claim 35, further comprising performing the defining and reassigning steps two or more times (Hirota: The reassignment of gradation level for an edge pixel in the character edge enhancement occurs for multiple edge pixels. Therefore the examiner views the reassigning step to be performed multiple times, page 12, paragraph 0161).

With respect to claim 41, Bares in view of Hirota in view of Fujisaki in further view of Smith disclose a method in accordance with claim 35, wherein the reassigning step

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comprises reassigning multiple interior pixel values (Smith: Edge smoothing technique decreases the charge at pixel edge region several pixels wide to include pixels interior to the edge pixels thereby reassigning multiple interior pixel values in the smoothing process, col 5, lines 26-39 and Fig 4).


Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A. Schlack whose telephone number is (571)272-7954. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Scott A. Schlack


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SUPERVISORY PATENT EXAMINER
3/16/07